

CLAIMS

What is claimed is:

1. A connector, comprising:
at least one tunnel having a first portion and a second portion;
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at least one pin, wherein at least a portion of said pin is
positioned within said tunnel;
wherein said first portion of said tunnel has a first inner surface,
said first inner surface forces at least a portion of said pin in at least a first
10 predetermined direction as said connector engages a corresponding
connector, whereby contaminants are at least partially removed from at least
one of said pin and the corresponding connector as said first inner surface
forces said pin in said first predetermined direction.
- 15 2. The connector according to claim 1, wherein said first inner
surface runs along an axis that is at a predetermined angle with respect to a
vertical axis of said tunnel.
- 20 3. The connector according to claim 1, wherein said pin includes a
contact surface that contacts a contact of the corresponding connector,
wherein said first inner surface forcing said pin in said first predetermined
direction causes said contact surface to slide against the contact of the
corresponding connector, whereby the contaminants on at least one of said
pin and the contact of the corresponding connector are at least partially

removed from at least one of said pin and the contact of the corresponding connector as said contact surface slides against the contact of the corresponding connector.

5 4. The connector according to claim 2, wherein said pin includes an elongated portion, a fork and a spring, wherein said elongated portion is attached to said spring and said spring is attached to said fork.

10 5. The connector according to claim 4, wherein said elongated portion extends from said spring along an axis at a predetermined angle with respect to a vertical axis of said pin, wherein said predetermined angle of said axis that said elongated portion runs along at least substantially matches said predetermined angle of said axis that said first inner surface runs along.

15 6. The connector according to claim 2, wherein said first portion of said tunnel further includes a second inner surface opposed to said first inner surface, wherein said second inner surface runs along an axis that is at a predetermined angle that at least substantially matches said predetermined angle of said axis that said first inner surface runs along.

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7. The connector according to claim 6, wherein said second inner surface forces said pin in a second predetermined direction as said connector disengages the corresponding connector.

8. The connector according to claim 7, wherein said second predetermined direction is at least substantially opposite to the first predetermined direction.

5 9. The connector according to claim 4, wherein said first portion houses said elongated portion of said pin and said second portion houses said spring of said pin.

10 10. The connector according to claim 1, further comprising a body, wherein said body includes a plurality of said tunnels and at least a portion of said pins extend beyond said tunnels, wherein said body includes a head that fits at least substantially within the corresponding connector.

15 11. The connector according to claim 1, wherein said connector is an accessory connector and the corresponding connector is mounted on an electronic device.

20 12. The connector according to claim 3, wherein said pin includes an elongated portion, a fork and a spring, wherein said elongated portion is attached to said spring and said spring is attached to said fork, wherein at least a portion of said elongated portion is curved.

13. The connector according to claim 12, wherein said elongated portion has a segment that runs along an axis that is at a predetermined

angle with respect to a horizontal axis of said pin, wherein said segment is attached to said curved portion of said elongated portion and said spring.

14. The connector according to claim 13, wherein said first
5 predetermined direction is a curved direction that runs along an arc thereby causing said contact surface of said pin to slidably rotate against the contact of the corresponding connector, whereby the contaminants on at least one of said pin and the contact of the corresponding connector are at least partially removed from at least one of said pin and the contact of the corresponding
10 connector as said contact surface slidably rotates against the contact of the corresponding connector.

15. The connector according to claim 12, wherein said first portion of said tunnel further comprises a second inner surface opposed to said first
15 inner surface, wherein said first inner surface and said second inner surface are curved, and wherein the shape of said first inner surface and said second inner surface substantially match said curved portion of said elongated portion.

20 16. The connector according to claim 15, wherein said second inner surface, in combination with said first inner surface, forces said pin in said first predetermined direction.

17. The connector according to claim 16, wherein said first inner surface and said second inner surface force said pin in a second predetermined direction, wherein said second predetermined direction is a curved direction that is opposite that of said first predetermined direction,
- 5 wherein said second predetermined direction causes said contact surface of said pin to slidably rotate against the contact of the corresponding connector.

18. A system for cleaning contacts of corresponding connectors, comprising:

5 a first connector including at least one tunnel having a first portion and a second portion and at least one pin, wherein at least a portion of said pin is positioned within said tunnel; and

a second connector;

wherein said first portion of said tunnel has a first inner surface, said first inner surface forces at least a portion of said pin in a predetermined direction as said first connector is engaged with said second connector;

10 wherein contaminants on at least one of said pin and said second connector are at least partially removed from at least one of said pin and said second connector as said first inner surface forces said pin in said predetermined direction.

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19. The system according to claim 18, wherein said first inner surface runs along an axis that is at a predetermined angle with respect to a vertical axis of said tunnel.

20 20. The system according to claim 19, wherein said pin includes a contact surface that contacts a contact of said second connector, wherein said first inner surface forcing said pin in said predetermined direction causes said contact surface to slide against said contact of said second connector.

21. The system according to claim 18, wherein said tunnel further comprises a second inner surface and said pin includes an elongated portion, wherein said first inner surface, said second inner surface and said elongated portion are curved.

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22. The system according to claim 21, wherein said pin further includes a contact surface that contacts a contact of said second connector, wherein said first inner surface forcing said pin in said predetermined direction causes said contact surface to slidably rotate against said contact of

10 said second connector.